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MARGER JOHNSON & MCCOLLOM, P.C.
210 SW MORRISON STREET, SUITE 400
PORTLAND, OR 97204

| EXAMINER | |
|---|---|
| NELSON, ALECIA DIANE | |
| **ART UNIT** | **PAPER NUMBER** |
| 2675 | |

DATE MAILED: 12/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/037,437 | BOOTH ET AL. | |
| | Examiner | Art Unit | |
| | Alecia D. Nelson | 2675 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *13 May 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-22 and 28-47* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22 and 28-47* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. ***Claims 1-14 and 40-47***are rejected under 35 U.S.C. 103(a) as being unpatentable over Stam et al. (U.S. Patent Application Publication 2002/0047624) in view of Cok et al. (U.S. Patent No. 6,320,325).

With reference to **claim 1**, Stam et al. teaches a display system (100) comprising a plurality of LEDs forming a display panel, at least some of the LEDs

(110) of the display panel operable in an emit mode and at least some of the LEDs (106) operable in a sense mode. A driving circuit (processor, 401) adapted to couple to one of the plurality of LEDS (110) operable in the emit mode and structured to cause the one of the plurality of LEDS operable in the emit mode to emit light (page 2, paragraph 25). A sensing circuit (see Figure 4, circuitry including 106, R7, C1) adapted to couple to one of the plurality of LEDs operable in the sense mode and structured to cause the one of the plurality of LEDs operable in the sense mode to sense light energy (see page 4, paragraph 41). It is also taught a storage circuit (402) structured to store data related to energy received by the sensing circuit (106) (see page 5, paragraph 52).

While teaching a processor (401) coupled to the storage circuit and structured to control the driving circuit based on information stored in the storage circuit (see abstract), there is no specific disclosure that the processor is consider a feedback controller. However it performs the functions of the claimed feedback controller by allowing data stored in the memory device to be used as the driving signal for the driving circuit based on the stored information (see paragraph 37).

Moreover, Cok et al. teaches a display composed of an array (10) of light emitting pixels with driver circuitry (12) and control circuitry (14). A representative pixel (20) and a photosensor (21) coupled to the representative pixel. The photosensor (21) is responsive to the light output by the representative pixel (20) or ambient light (see column 4, lines 8-10), wherein the signal from the photosensor is connected to a feedback circuit (22) which

processes the signal and modifies the control signals provided to driver circuitry (12) (see column 2, line 61-column 3, lines 10).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to allow the usage of a feedback circuit similar to that which is taught by Cok et al. in a device similar to that which is taught by Stam et al. which suggest that the processor carries out the function of the feedback circuit. A device allowing light detection capabilities together with feedback logic to control the operational characteristics of the display device, improved lifetime, better brightness, uniformity, and power consumption can be achieved (see Cok et al, column 2, lines 28-39).

With reference to **claim 2**, Stam et al. teaches that at least some of the plurality of LEDS of the display are operable in the emit mode and in the sense mode (see page 3, paragraph 36).

With reference to **claim 3**, Stam et al. teaches that one or more of the plurality of LEDs comprises an organic material (see page 3, paragraph 30).

With reference to **claim 4**, Stam et al. teaches that the sensing circuit comprises a reverse bias circuit coupled to the one of the plurality of LEDS operable in the sense mode (see page 3, paragraph 36).

With reference to **claims 5 and 6**, Stam et al. teaches that the sensing circuit is structured to sense an amount of light energy received by the one of the plurality of LEDS operable in sense mode and to sense an amount of light energy generated from outside the display panel (see page 3, paragraph 31).

With reference to **claim 7**, Stam et al. teaches all that is required as explained above with reference to **claim 1**. Even though Stam et al. teaches that one of LEDs (101-13) may be used as a detector (106), wherein the one LED can be reverse-biased and operated as a photodiode to detect light from other LEDs (see page 3, paragraph 36), there is no disclosure that the biasing circuit is coupled to a first terminal and a sensing circuit is coupled to a second terminal. However it would have been obvious to one having ordinary skill in the art at the time of the invention to allow for circuitry connection to the LEDs in order to carry out the reverse-biased driving and the LED and detecting the light being emitted.

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to allow for appropriate connection to the terminals of the LEDs in order to carry out the reverse-biasing and sensing as disclosed by Stam et al. in order to thereby provide an improved display assembly that produces light of a desired resultant hue based on detected lighting conditions.

With reference to **claim 8**, Stam et al. teaches that the sensing circuit comprises a sense amplifier (pull-up resistor, R7) (see page 4, paragraph 41).

With reference to **claim 9**, Stam et al. teaches that the LEDs are independently controlled (see page 2, paragraph 25), which would thereby make it obvious to one having ordinary skill in the art for the detecting LED to also be independently controlled being that it has a different function then that of the first group of LEDs, and the LEDs of the first group are controlled by different circuitry then that of the LEDs in the second group.

With reference to **claim 10**, Stam et al. teaches that LEDs are illustrated in groups, however other configurations are possible (see page 4, paragraph 39).

With reference to **claim 11**, Stam et al. teaches that the driving circuit (401) is adapted to be coupled to a row of LEDS (110) operable in the emit mode (see page 4, paragraph 39) while the sensing circuit is adapted to be coupled to a row of LEDS operable in the sense mode (see page 4, paragraph 41), the row of LEDs operable in the emit mode is adjacent to the row of LEDs operable in the sense mode (see page 4, paragraph 39).

With reference to **claim 12**, Stam et al. teaches adjusting the brightness of the LEDs (110) with respect to the reading from the detector (106) by modulation of the pulse widths (see page 4, paragraph 43), which would thereby be inherent for the device to contain circuitry for adjusting the brightness as explained.

With reference to **claims 13 and 14**, Stam et al. teaches that the LED of the display panel operable in the sense mode is configured to sense light from a source external to the display panel or from the LED in the display panel operable in the emit mode (see page 3, paragraph 31).

With reference to **claims 40-44**, Stam et al. teaches that initial measurements of the intensity and optionally peak wavelength of the LEDs are made during manufacture and are stored in the memory, however fails to teach the usage of a comparator.

Cok et al. teaches that the signal detected by the photosensor is used to provide feedback from the light detected, wherein the signal generated is compared to a prior knowledge of the signal generated at the desired luminance (see column 3, lines 56-59).

Therefore it would have been obvious to combine the teachings of Stam et al. and Cok et al. as explained above.

With reference to **claim 45**, the usage of a multiplexor as a splitter of a signal is well known in the art, and the usage in the system similar to that which is taught by Stam and Cok in order to allow further separation of the signals applied to the LEDs to provide for independent driving of the LEDs.

With reference to **claims 46 and 47,** Stam et al. teaches a display system (100) comprising a plurality of OLEDs forming a display panel, which are known

to be formed in column and rows, at least some of the LEDs (110) of the display panel operable in an emit mode and at least some of the LEDs (106) operable in a sense mode. A driving circuit (processor, 401) adapted to couple to one of the plurality of LEDS (110) operable in the emit mode and structured to cause the one of the plurality of LEDS operable in the emit mode to emit light (page 2, paragraph 25). A sensing circuit (see Figure 4, circuitry including 106, R7, C1) adapted to couple to one of the plurality of LEDs operable in the sense mode and structured to cause the one of the plurality of LEDs operable in the sense mode to sense light energy (see page 4, paragraph 41). It is also taught a storage circuit (402) structured to store data related to energy received by the sensing circuit (106) (see page 5, paragraph 52), as well as initial data signals (see page 6, paragraph 53, 55)

While teaching a processor (401) coupled to the storage circuit and structured to control the driving circuit based on information stored in the storage circuit (see abstract), there is no specific disclosure that the processor is considered as a position locator including a comparator structured to compare data sensed by the diodes in the sensing mode. However it performs the functions of the claimed position locator controller by allowing data stored in the memory device to be used in comparison to the sensed data received in the sensing mode (see paragraph 53, 57).

Moreover, Cok et al. teaches a display composed of an array (10) of light emitting pixels with driver circuitry (12) and control circuitry (14). A representative pixel (20) and a photosensor (21) coupled to the representative

pixel. The photosensor (21) is responsive to the light output by the representative pixel (20) or ambient light (see column 4, lines 8-10), wherein the signal from the photosensor is connected to a feedback circuit (22) which processes the signal and modifies the control signals provided to driver circuitry (12) (see column 2, line 61-column 3, lines 10). Wherein the signal generated by the photosensor is compared to a prior knowledge of the signal generated at the desired luminance (see column 3, lines 56-60).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to allow the usage of a comparator similar to that which is taught by Cok et al. in a device similar to that which is taught by Stam et al. which suggest that the processor carries out the function of the comparator. A device allowing light detection capabilities together with feedback logic to control the operational characteristics of the display device, improved lifetime, better brightness, uniformity, and power consumption can be achieved (see Cok et al, column 2, lines 28-39).

3. ***Claims 15-16*** is rejected under 35 U.S.C. 103(a) as being unpatentable over Stam et al. in view of Cok et al. as applied to **claim 1** above, and further in view of Gu (U.S. Patent Publication No. 2003/0052904).

With reference to the claim Stam et al. teaches all that is required as explained above, including teaching that it is possible to use multiple detectors to sense output from different LEDs (see page 3, paragraph 35), as well as adjusting the brightness of the emitting LEDs based on reading from the

detecting LEDs by adjusting the width of the pulses (see page 4, paragraph 43). It is also taught calibration by varying a discrete component, which thus varies the intensity of one or more colors of the LEDs (see page 6, paragraph 56). Cok et al. also teaches the usage of calibration (see column 4, lines 30-62), however there is no disclosure concerning a uniformity calibration circuit or a gamma uniformity calibration circuit operable to adjust the output of the LED in the display panel.

Gu teaches a pulse width modulation method employed on an organic light emitting device comprising a plurality of pixels (65A-65R) arranged in a matrix array comprises current driven light emitting diodes (see page 2, paragraph 25), wherein it is necessary due to imperfections a calibration for the gamma correction to match the image with the characteristics of the plurality of pixels (see page 2, paragraph 26).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to allow for calibration for the gamma correction, as taught by Gu, in a device similar to that which is taught by Stam et al. and Cok et al. in order to thereby provide an OLED display device wherein the resultant display intensity is more desirable to the user.

4. ***Claims 17-19 and 41***are rejected under 35 U.S.C. 103(a) as being unpatentable over Stam et al. in view of Cok et al. as applied to **claim 1** above, and further in view of Ogawa (U.S. Patent No. 5,572,251).

With reference to **claims 17-19 and 41** Stam et al. and Cok et al. teach all that is required as explained above however fails to teach a position circuit coupled to the sensing circuit structured to determine a position on the display panel at which an external light source is pointing.

With reference to **claims 17 and 41**, Ogawa teaches an input system for a computer including an optical position detecting unit (12) and a laser pointer (15) for generating a light point (14) on the screen (11). Alight take-in portion (12a) of the optical position detecting unit (12) receives light from the light point (14) on the screen (11) and the optical position detecting unit (12) detects the position of the light point (14) (see column 3, lines 9-26). With further reference to **claim 18**, it is taught that it is possible for the device to detect two or more light points (see column 9, lines 9-13). Further with reference to **claim 19**, there is taught an image input section (29) receives signals from CCD image sensor (27) regarding positional information, which is then processed and passed to the computer unit (17) (see column 4, lines 20-35), which performs necessary data processing by using the position data that has been supplied (see column 3, lines 32-34)

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to allow for the positional detection of an external light source being pointed at the display, as taught by Ogawa, in a device similar to that which is taught by Stam et al. and Cok et al., in order to thereby provide a system in which position detecting resolution with respect to the number of pixels in the image pickup device can be heightened so that an economical and high accurate optical position detecting unit can be provided.

5. ***Claims 20-22*** are rejected under 35 U.S.C. 103(a) as being unpatentable over Stam et al. in view of Cok et al. as applied to **claim 1** above, and further in view of Forrest et al. (U.S. Patent Application Publication No. 2003/0213967).

With reference to the claims Stam et al. and Cok et al. teach all that is required as explained above, however fails to teach that the OLED is a stacked OLED (SOLED).

Forrest et al. teaches a multicolor organic light emitting device employing vertically stacked layers (see abstract) comprising a stack of LEDs (20-22) (see paragraph 38)

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to allow for the usage of a SOLED, as taught by Forrest et al. in a device similar that which is taught by Stam et al. and Cok et al. in order to provide a multicolor organic light emitting device employing several types of organic electroluminescent media which performs with more desirable intensity levels.

6. ***Claims 28, 29, and 32-35*** are rejected under 35 U.S.C. 103(a) as being unpatentable over Stam et al. in view of Mueller et al. (U.S. Patent No. 6,016,038).

With reference to **claim 28**, Stam et al. teaches a method for operating a display system that includes a display device (100) having one or more diodes (110) structured to generate light (see page 2, paragraph 25), and having one or

more diodes (106) structured to sense light energy shining on them (see page 3, paragraph 31) comprising; a forward driving circuit (processor, 401) driving the diodes structured to generate light to cause an image to be shown on the display device; and reverse-biased circuit (see page 3, paragraph 36) measuring an amount of light energy shining on the diodes structured to sense light energy (see Figure 4, circuitry including 106, R7, C1).

Even though Stam et al. teaches the driving circuitry, reverse-biased circuitry, and sensing circuitry there is no disclosure as to the usage of a first percentage of a duty cycle for driving the diodes and a second percentage of the duty cycle not equal to the first percentage for measuring light.

Mueller et al. teaches a LED system for generating light for display purposes (see abstract) wherein it is disclosed that the system is capable of operating each of the LEDs independently from one another in (see column 6, lines 23-63).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to allow for the display device to generate electroluminescent light, as taught by Mueller et al. to a device similar to that which is taught by Stam et al. in order to provide a organic electroluminescent light emitting display device wherein a pulse width modulated current control for the LED lighting assembly where each current controlled unit is uniquely addressable. This thereby provides a display module achieving maximum light intensity ratings (see Mueller et al., column 2, lines 21-35).

With reference to **claims 29**, Stam et al. teaches that the diodes are driven independently, and thereby would be obvious to one having ordinary skill in the art to allow the driving and measuring to be carried out simultaneously (see page 2, paragraph 25).

With reference to **claim 32**, Stam et al. teaches that some of the light emitted from LEDs (110) is scattered from the diffuser (105) back towards detector (106) and thus allowing the detector (106) to measure the relative output of the LEDs (110). Additionally, the detector (106) can optionally measure the ambient light through the diffuse (105) (see page 3, paragraph 31).

With reference to **claims 33 and 35**, Stam et al. teaches that the overall brightness of the display device is adjusted based on the amount of light detected by the sensing diode (see page 2, paragraph 24).

With reference to **claim 34**, Stam et al. teaches adjusting the brightness of the emitting LEDs based on reading from the detecting LEDs by adjusting the width of the pulses (see page 4, paragraph 43).

7. ***Claims 30 and 31*** are rejected under 35 U.S.C. 103(a) as being unpatentable over Stam et al. in view of Mueller et al. as applied to claim 28 above, further in view of Scozzafava et al. (U.S. Patent No. 5,073,446).

Even though Stam et al. teaches that it is possible for one of LEDs (110) to be used as a detector (106), and Mueller et al. teaches independently driving of the diodes, the disclosures fail to specifically teach the display cycle of the driving diodes and the measuring diodes.

Scozzafava et al. teaches that the organic EL devices are forward biased during a portion of each period and reverse biased during the remaining portion of the period (see column 4, lines 1-8).

Therefore it would have been obvious to one having ordinary skill in the art to allow for a display cycle of driving and sensing, as taught by Scozzafava et al, in a device similar to that which is taught by Stam et al. and Mueller et al. which allows for one LED to be driven to emit light and to detect emitted light in order to achieve a desired resultant intensity on the display device.

8. ***Claim 36*** is rejected under 35 U.S.C. 103(a) as being unpatentable over Stam et al. in view of Mueller et al. as applied to **claim 28** above, and further in view of Gu (U.S. Patent Publication No. 2003/0052904).

With reference to the claim Stam et al. teaches all that is required as explained above, including teaching that it is possible to use multiple detectors to sense output from different LEDs (see page 3, paragraph 35), as well as adjusting the brightness of the emitting LEDs based on reading from the detecting LEDs by adjusting the width of the pulses (see page 4, paragraph 43). It is also taught calibration by varying a discrete component, which thus varies the intensity of one or more colors of the LEDs (see page 6, paragraph 56),

however there is no disclosure concerning a uniformity calibration circuit or a gamma uniformity calibration circuit operable to adjust the output of the LED in the display panel.

Gu teaches a pulse width modulation method employed on an organic light emitting device comprising a plurality of pixels (65A-65R) arranged in a matrix array comprises current driven light emitting diodes (see page 2, paragraph 25), wherein it is necessary due to imperfections a calibration for the gamma correction to match the image with the characteristics of the plurality of pixels (see page 2, paragraph 26).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to allow for calibration for the gamma correction, as taught by Gu, in a device similar to that which is taught by Stam et al. and Mueller et al. in order to thereby provide an OLED display device wherein the resultant display intensity is more desirable to the user.

9. ***Claims 37-39*** are rejected under 35 U.S.C. 103(a) as being unpatentable over Stam et al. and Mueller et al. as applied to **claim 28** above, and further in view of Ogawa (U.S. Patent No. 5,572,251).

With reference to **claims 37-39** Stam et al. and Mueller et al. teach all that is required as explained above however fails to teach a position circuit coupled to the sensing circuit structured to determine a position on the display panel at which an external light source is pointing.

Ogawa teaches an input system for a computer including an optical position detecting unit (12) and a laser pointer (15) for generating a light point (14) on the screen (11). A light take-in portion (12a) of the optical position detecting unit (12) receives light from the light point (14) on the screen (11) and the optical position detecting unit (12) detects the position of the light point (14) (see column 3, lines 9-26). With further reference to **claim 38**, it is taught that it is possible for the device to detect two or more light points (see column 9, lines 9-13). Further with reference to **claim 39**, there is taught an image input section (29) receives signals from CCD image sensor (27) regarding positional information, which is then processed and passed to the computer unit (17) (see column 4, lines 20-35), which performs necessary data processing by using the position data that has been supplied (see column 3, lines 32-34)

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to allow for the positional detection of an external light source being pointed at the display, as taught by Ogawa, in a device similar to that which is taught by Stam et al. and Mueller et al., in order to thereby provide a system in which position detecting resolution with respect to the number of pixels in the image pickup device can be heightened so that an economical and high accurate optical position detecting unit can be provided.

## ***Response to Arguments***

10. Applicant's arguments filed 5/21/04 have been fully considered but they are not persuasive.

In the applicant's response there are arguments made towards Forrest et al. (U.S. Patent Application Publication No. 2003/0213967) not being prior art because the filing date of the present application is before that of the reference. However, noted in the related applications are parent applications, to which the Forrest et al. reference is a continuation thereof, having an earlier filing date. Being that the information relied upon in the Forrest reference is also included in those parent applications, the reference claims the benefit of the earlier filing dates of the parent applications. Therefore the Forrest reference is prior art and has not been withdrawn.

### ***Conclusion***

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will

the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alecia D. Nelson whose telephone number is (703) 305-0143. The examiner can normally be reached on Monday-Friday 9:30-6:00. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sumati Lefkowitz

SUMATI LEFKOWITZ
SUPERVISORY PATENT EXAMINER

adn/ADN
August 6, 2004